Use Attainability Analysis

for

Water Body Identification # 2124

Mill Creek

Conducted by:

Environmental Resources Coalition

To:

Missouri Department of Natural Resources
Water Protection Program

Submitted: July 14, 2005

Environmental Resources Coalition

Stream Description – WB ID: 2124 – Mill Creek

Mill Creek (WB 2124) is a two mile Class C stream. The water body is located in eastern Washington County on the western edge of the Ozark Border physiographic region (Thom and Wilson 1980). The Ozark Border physiographic region includes the rugged river hills with deep, relatively productive soils along both sides of the Missouri River and extending along the lower Mississippi River on the eastern border of the state to the Mississippi Lowlands Natural Division. The Mississippi River Section of the Ozark Border region is characterized by streams flowing to the Mississippi River and the Mississippi River Lowlands region. The dominant topography of the region is highly dissected gentle rolling plains. Soils range from deep productive loess soils to shallow soils derived from bedrock.

Mill Creek is the receiving water body of the Potosi #2 waste water treatment facility (WWTF). The classified reach runs from the north side of Highway 8 and runs just north of the city limits of Mineral Point (population 363). Beyond the classified reach, Mill Creek continues flowing in a northerly direction to the confluence with Big River near Blackwell, Missouri. Approximately one and ½ miles of the assessed reach lies upstream or south of WWTF. Four sites of the stream were assessed for physical characteristics. During this assessment, the surveyor did not find sufficient depth to support whole body contact recreation (maximum depth of at least one meter or average depth of at least ½ meter.)

Thom, R. H. and J. H. Wilson. 1980. The Natural Divisions of Missouri. Trans. Mo. Acad. Sci. 14: 9-23.

Note: During the first visit to each site, ERC selected an assessment location (either upstream or downstream) based on which side appeared deepest and or most likely for whole body recreation.

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet A: Water Body Identification

Water Body Name: Mill Creek
8 – digit HUC: 07140104
Missouri WBID # 2124
County: Washington
Upstream Legal Description: Sec. 18, T37N, R3E, Washington County
Downstream Legal Description: Sec. 8, T37N, R3E, Washington County
Upstream Coordinates: Latitude 37.9246251° N , Longitude 90.7417908° W
Downstream Coordinates: Latitude 37.9514571 ° N , Longitude 90.7206937 ° W
Discharger Facility Name(s): Potosi WWTF # 2
Discharger Permit Number(s): MO0099732
Number of Sites Evaluated: 4
Name of Surveyor and Telephone Number: Robert R. Bacon, (573) 634-7078
Organization: Environmental Resources Coalition (ERC)
Position: Director of Aquatic Services

I, the undersigned, hereby affirm to the best of my knowledge, that all information reported on this UAA sheet is true and accurate.

Signed: Robert R Bacon

Date: 7-14-2005

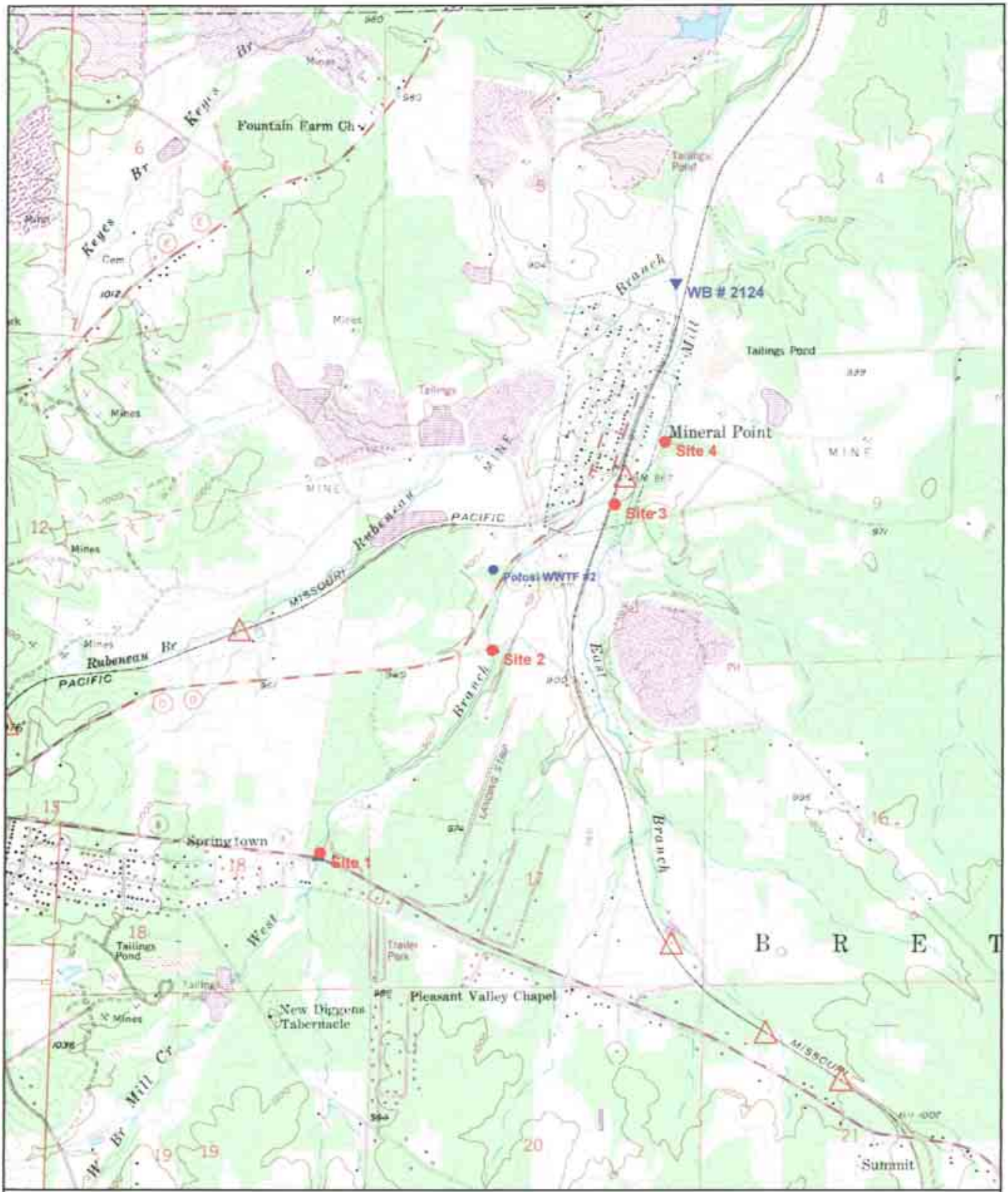
Weather Conditions

Weather conditions for the field surveys and the previous ten days are listed in the tables below.

Data from the Midwestern Regional Climate Center
Potosi, Missouri - Station ID: 236826

Date	Precipitation (Inches)	Min. Temp (°F)	Max. Temp (°F)	Average Temp (°F)
04/07/2005	0.27	54	72	63
04/08/2005	Trace	44	60	52
04/09/2005	0	45	72	59
04/10/2005	0	51	78	65
04/11/2005	0	62	80	71
04/12/2005	0.74	51	65	58
04/13/2005	0.35	44	65	55
04/14/2005	0.01	34	54	44
04/15/2005	0	34	65	50
04/16/2005	0	45	73	59
04/17/2005	0	54	79	67

Date	Precipitation (Inches)	Min. Temp (°F)	Max. Temp (°F)	Average Temp (°F)
05/22/2005	0.39	52	73	63
05/23/2005	0.02	58	78	68
05/24/2005	0	55	81	68
05/25/2005	0	50	72	61
05/26/2005	0	56	72	64
05/27/2005	0	52	69	61
05/28/2005	0.1	50	77	64
05/29/2005	0.27	52	76	64
05/30/2005	0	52	80	66
05/31/2005	0	57	79	68
06/01/2005	0	53	78	66



Name: MINERAL POINT
Date: 7/12/2005
Scale: 1 inch equals 2000 feet

Location: 037.9367892° N 090.7309017° W

WB # 2124 – Mill Creek

Site # 1 - Off Hwy 8 at Al Burton Industrial Park

GPS Location	**37.9247723 North** **90.7418181 West**
Elevation (feet)	**941.1**

Upstream Views

**** Upstream views were out of the classified reach.**

Downstream Views

04/17/05

06/01/05

Physical Dimensions – Site # 1

	04/17/05	06/01/05
Assessment Location	Downstream	Downstream
Time	6:40AM	8:56AM
Stream Type	Riffle	Riffle
Width (m)	3.05	2.74
Length (m)	30.48	22.86
Ave Depth (cm)	14.00	6.6
Maximum Depth (cm)*	20.0	10.0
Flow Present	Yes	Yes
Flow (cfs)	-	-
SUBSTRATE		
Cobble	0%	0%
Gravel	100%	100%
Sand	0%	0%
Silt	0%	0%
Mud / Clay	0%	0%
Bedrock	0%	0%
	100%	100%
OTHER		
Uses Observed	None	None
Evidence of Human Use (WBCR)	None	None
Aquatic Vegetation	None	None
Water Characteristics		
Odor	None	None
Color	Clear	Clear
Bottom Deposits	None	None
Surface Deposits	None	None

* Maximum depth is maximum measured depth within the stream cross-section

NOTES: Site # 1 is the uppermost point on Mill Creek

WB # 2124 – Mill Creek

Site # 2 - Off Parkwood Dr.

GPS Location 37.9342651 North
90.7316772 West

Upstream Views

04/17/05

06/01/05

Downstream Views

04/17/05

06/01/05

Physical Dimensions – Site # 2

	04/17/05	06/01/05
Assessment Location	Upstream	Upstream
Time	6:55 AM	9:20 AM
Stream Type	Run	Run
Width (m)	11.13	7.62
Length (m)	30.48	30.48
Ave Depth (cm)	4.08	4.93
Maximum Depth (cm)*	13.0	14.0
Flow Present	Yes	Yes
Flow (cfs)	-	-
SUBSTRATE		
Cobble	80%	80%
Gravel	20%	20%
Sand	0%	0%
Silt	0%	0%
Mud / Clay	0%	0%
Bedrock	0%	0%
	100%	100%
OTHER		
Uses Observed	None	Livestock Watering
Evidence of Human Use (WBCR)	None	None
Aquatic Vegetation	10% plant cover	20% emergent
Water Characteristics		
Odor	None	None
Color	Cloudy	Clear
Bottom Deposits	None	None
Surface Deposits	None	Foam

* Maximum depth is maximum measured depth within the stream cross-section

NOTES:

WB # 2124 – Mill Creek

Site # 3 - Off South Waters St. in Mineral Point

GPS Location **37.9411244 North**
90.7244509West

Upstream Views

04/17/05

06/01/05

Downstream Views

04/17/05

06/01/05

Physical Dimensions – Site # 3

	04/17/05	06/01/05
Assessment Location	Upstream	Upstream
Time	7:10 AM	9:19 AM
Stream Type	Run	Run
Width (m)	5.94	6.10
Length (m)	106.68	76.20
Ave Depth (cm)	4.86	17.55
Maximum Depth (cm)*	11.0	29.0
Flow Present	Yes	Yes
Flow (cfs)	-	-
SUBSTRATE		
Cobble	0%	0%
Gravel	20%	20%
Sand	0%	0%
Silt	0%	0%
Mud / Clay	0%	0%
Bedrock	80%	80%
	100%	100%
OTHER		
Uses Observed	None	None
Evidence of Human Use (WBCR)	None	None
Aquatic Vegetation	thick periphyton growth	Algae, periphyton
Water Characteristics		
Odor	None	Chemical
Color	Dark green	Clear
Bottom Deposits	periphyton	periphyton
Surface Deposits	None	Foam

* Maximum depth is maximum measured depth within the stream cross-section

NOTES:

WB # 2124 – Mill Creek

Site # 4 - Off 6th Street in Mineral Point

GPS Location **37.9440739 North**
90.7214732 West

Upstream Views

04/17/05

06/01/05

Downstream Views

04/17/05

06/01/05

Physical Dimensions – Site # 4

	04/17/05	06/01/05
Assessment Location	Upstream	Upstream
Time	7:30 AM	10:15 AM
Stream Type	Riffle	Riffle
Width (m)	7.77	7.62
Length (m)	12.19	60.96
Ave Depth (cm)	5.82	0.24
Maximum Depth (cm)*	21.5	13.0
Flow Present	Yes	Yes
Flow (cfs)	-	-
SUBSTRATE		
Cobble	0%	50%
Gravel	100%	50%
Sand	0%	0%
Silt	0%	0%
Mud / Clay	0%	0%
Bedrock	0%	0%
	100%	100%
OTHER		
Uses Observed	None	None
Evidence of Human Use (WBCR)	None	None
Aquatic Vegetation	10-15% macrophyte cover heavy periphyton mats	Algae, periphyton
Water Characteristics		
Odor	None	None
Color	Light green	Clear
Bottom Deposits	periphyton	periphyton
Surface Deposits	None	Little foam

* Maximum depth is maximum measured depth within the stream cross-section

NOTES:

Site Descriptions

Site #1: Site #1 of Mill Creek is located off Highway 8, is the uppermost site of the reach, and is approximately 0.2 miles east of the Al Burton Industrial Park. At this site, the stream is very small with very little flow, which makes obtaining an accurate flow reading difficult. Roadside trash from Highway 8 is scattered throughout the site. The stream is very hard to access at this point due to heavy brush.

Site #2: Site #2 of Mill Creek is located on Parkwood Street, and is approximately ¼ of a mile upstream of the WWTF. The surrounding conditions at this site include large wooded areas, a house and the state prison, which can be seen from this site on the west side of highway O. Here the stream is used for livestock watering, and ATV tracks through the water body were noted. The stream is braided at this location and is likely at least partly spring-fed due the watercress being present in the creek.

Site #3: Site #3 of Mill Creek is located on South Water Street within the city limits of Mineral Point. At this location several residences surround the stream, and both a railroad bridge and the culvert for Water Street cross it. Surface deposits consist of algae, and a strong chemical smell is prevalent. The water is clear, and ATV tracks go through the upstream side of the stream at this location.

Site #4: Site #4 of Mill Creek is located on Sixth Street within the city limits of Mineral Point. Houses line the left descending bank of the stream at this site, and large wooded areas compose both the upstream side and the right descending bank. Surface deposits consist of heavy algae and foam. A fire ring on the bank was noted and can be seen in a picture during our first assessment. However, during a later interview it was discovered that neighbors were burning a tree stump in order to have a better view of the creek.

I, the undersigned, hereby affirm to the best of my knowledge, that all information reported on the UAA datasheets, are true and accurate.

Signed: Robert A Bur

Date: 7-14-2005

Organization: ERC

Position: Dir of Aquatic Services

Summaries of Interviews

The following interviews were conducted by Abby Welschmeyer and Anna Welschmeyer with landowners and creek users during the month of June 2005. Questions were asked of the interviewee either in person or over the phone, and survey sheets were completed based on the information acquired by the interviewer. The questions asked are as follows:

- How long have you lived near this body of water?
- Do you or your family utilize this body of water for recreational activities?
- If not used, why?
- If used, what types of activities, what season, how many times per period, and what flow conditions (low, medium, or high)?
- Have you witnessed other people utilizing the water body? (If so, the aforementioned questions apply.)

To assist in the collection of interviews, letters were developed detailing the water quality rule, our affiliation with the Missouri Department of Natural Resources and our contact information. These letters were left at residences nearby the water body where no one answered the door. This turned out to be a very effective way of quickly collecting key interviews of people most familiar with the resource.

Date: 06/30/05
Time: 9:58 AM
Name: Debbie Drennen
Reason for interview: lives near site # 2 – phone interview

Debbie Drennen has lived near Mill Creek for three years. She and her family use the water body for wading a few times per week during the summer months. She stated that the water is knee deep on her children. Ms. Drennen has not seen anyone else using the stream for recreation, and stated the reason was probably the WWTF, which dumps in downstream from her house.

Date: 06/01/05
Time: 9:35 AM
Name: Raymond Cantrell
Reason for Interview: owns land near site # 2

Raymond Cantrell has lived near Mill Creek for 67 years. He stated that he and his family use the stream for wading during the summer months, and that some holes are knee-deep. Mr. Cantrell commented that a nearby sawmill has a lot of runoff into the water body, as do several trailer parks, and the correctional facility's WWTF. Mr. Cantrell said he has seen several kids in town playing and wading in the stream during the summer.

Summaries of Interviews (cont'd)

Date: 06/01/05
Time: 10:47 AM
Name: Jeffrey Benson
Reason for Interview: WWTF operator

Jeffrey Benson has operated the Potosi # 2 WWTF for 14 years. He does not use the stream for recreation because of a lack in depth. Mr. Benson claimed that several years ago either EPA or DNR did water testing, and the results stated that the water in Mill Creek was more polluted upstream of his facility than it was downstream. He also stated that he rarely sees anyone get in the stream for recreational purposes.

Date: 06/04/05
Time: 12:33 PM
Name: Twila Jarvis
Reason for Interview: lives between sites # 2 and # 3 (right by WWTF)

Twila Jarvis has lived near Mill Creek for 12 years. She does not use the stream for recreational activities because the WWTF dumps in it near her home. She stated that the bottom of the stream is sometimes brown and thick, and she is afraid to allow her children go near it. Ms. Jarvis said she will not even allow her livestock to drink from it. She has not seen anyone using the stream for recreational activities.

Date: 06/04/05
Time: 12:45 PM
Name: Robin Hausmann
Reason for Interview: lives near site # 3

Robin Hausmann has lived near Mill Creek for 18 years. She stated that she does not use the stream for recreational activities because it either smells because of the WWTF or it has a chemical odor. She commented that it is beautiful to look at, but can't be used. Ms. Hausmann said she does not allow her grandchildren to get in the stream, and would like to see it cleaned up. She has seen a few children, including a few of her relatives, use the water body for wading during the summer.

Summaries of Interviews (cont'd)

Date: 06/04/05
Time: 12:50 PM
Name: Henry Lewis
Reason for Interview: has weekend home near site #3

Henry Lewis has owned property near Mill Creek for five or six years. He does not use the stream for recreational activities because it is not clean enough and because he has a pool. Mr. Lewis stated that he knows the water body used to be very unclean, but is unsure of its state lately. He commented that he has seen people playing and wading in the summer, and that there are usually several children at the bridge (site #2).

Date: 06/01/05
Time: 10:14 AM
Name: Diane Pierce
Reason for Interview: lives near site #4

Diane Pierce has lived on the banks of Mill Creek for 15 years. She said that she does not use the stream for recreational activities because and has no reason to do so. However, she does value the stream for its general aesthetics. Ms. Pierce also stated she has not seen anyone using the stream for recreational activities.